

# New taxa of *Hieracium* and *Pilosella* (Asteraceae) from Northern Greece II.<sup>1</sup>

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**Abstract:** As a result of extensive fieldwork in Northern Greece prior to and in 2019, nine new species and six new subspecies of *Hieracium* and one new species of *Pilosella* are described: *Hieracium abietopsis* GOTTSCHL. & DUNKEL; *H. caesiolympicum* GOTTSCHL. & DUNKEL; *H. bractolympicum* GOTTSCHL. & DUNKEL; *H. diaphanoidopsis* subsp. *diaphanoidopsis* and subsp. *volakasense* GOTTSCHL. & DUNKEL; *H. jankolympicum* GOTTSCHL. & DUNKEL; *H. pellense* GOTTSCHL. & DUNKEL; *H. perdentatum* GOTTSCHL. & DUNKEL; *H. thessalonikense* GOTTSCHL. & DUNKEL; *H. vermiense* GOTTSCHL. & DUNKEL; *H. hypochoeroides* subsp. *paikoanum* GOTTSCHL. & DUNKEL; *H. pseudosparsum* subsp. *elatianum* GOTTSCHL. & DUNKEL; *H. retyezatense* subsp. *macilentoides* GOTTSCHL. & DUNKEL and subsp. *vrntousense* GOTTSCHL. & DUNKEL; *H. transiens* subsp. *excentricum* GOTTSCHL. & DUNKEL, and *Pilosella pieriana* GOTTSCHL. & DUNKEL. All species are illustrated. Intermediate species with morphological characters of *H. olympicum*, i.e., stem and leaves with rigid simple hairs up to 25 mm long, and thick campanulate flower heads with a bright or even white tomentose indument rich of stellate hairs, are categorized in a new section, sect. *Olympica* GOTTSCHL. & DUNKEL.

**Zusammenfassung:** Als Ergebnis weiterer gezielter Feldstudien in Nordgriechenland im Jahr 2019 und früher können 9 neue Arten und 6 neue Unterarten aus der Gattung *Hieracium* sowie eine neue Art aus der Gattung *Pilosella* beschrieben werden: *Hieracium abietopsis* GOTTSCHL. & DUNKEL; *H. caesiolympicum* GOTTSCHL. & DUNKEL; *H. bractolympicum* GOTTSCHL. & DUNKEL; *H. diaphanoidopsis* subsp. *diaphanoidopsis* und subsp. *volakasense* GOTTSCHL. & DUNKEL; *H. jankolympicum* GOTTSCHL. & DUNKEL; *H. pellense* GOTTSCHL. & DUNKEL; *H. perdentatum* GOTTSCHL. & DUNKEL; *H. thessalonikense* GOTTSCHL. & DUNKEL, *H. vermiense* GOTTSCHL. & DUNKEL; *H. hypochoeroides* subsp. *paikoanum* GOTTSCHL. & DUNKEL; *H. pseudosparsum* subsp. *elatianum* GOTTSCHL. & DUNKEL; *H. retyezatense* subsp. *macilentoides* GOTTSCHL. & DUNKEL und subsp. *vrntousense* GOTTSCHL. & DUNKEL; *H. transiens* subsp. *excentricum* GOTTSCHL. & DUNKEL und *Pilosella pieriana* GOTTSCHL. & DUNKEL. Alle Arten werden abgebildet. Zwischenarten mit Eigenschaften des *H. olympicum*, d. h., steife, bis zu 25 mm lange einfache Haare an Stängel und Blättern, große, dicke, Körbe mit reichlich Sternhaaren (Hüllen bis weißfilzig), werden in eine neue Sektion *Olympica* GOTTSCHL. & DUNKEL gestellt.

**Key words:** *Hieracium*, *Pilosella*, Greece, new species, new subspecies.

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## INTRODUCTION

*Hieracium* is a genus whose species present a wide range of growth forms with an ample flowering period from May to October. In Greece, the most interesting species and endemics

occur in the mountain and subalpine or Alpine vegetation zone, flowering in July. However, during our field studies in 2018 (GOTTSCHLICH & DUNKEL 2018), we found many interesting but withered plants of *Hieracium* and *Pilosella* in lower regions. In order to find them in flower, we decided to focus our collection



**Fig. 1:** Collection sites in Northern Greece 2019, red dots: reexamined localities, blue dots: new examined localities.

activities 2019 on June. This plan proved to be successful. The examination of the collected material allowed the description of further new taxa presented here.

## MATERIAL AND METHODS

As in 2018, collection activities focused on Northern Greece in 2019. Since many *Hieracia* grow along street embankments or forest edges, we tried to study as many localities as possible by car to get representative collections. Specimens are kept in the private herbaria of the authors and will be given at least partly to public collections at Stuttgart (STU) and Munich (M). The deposit of the holotypes and isotypes is indicated in each case. Collection sites are depicted in Fig. 1.

## RESULTS

Some *Hieracium* taxa new to the Greek flora, but formerly described coming from other countries, will be published separately (DUNKEL & GOTTSCHLICH, in prep.). The scope of this article includes only hitherto undescribed species new to science.

## 1 New species

### 1.1 *Hieracium abietopsis* GOTTSCHL. & DUNKEL, *spec. nova* (umbrosum > pannosum) (Fig. 2, 18a)

**Description:** *Planta* perennis, *rhizoma* subcrassum, obliquum; *caulis* verticalis, rectus, solidus, (40–)50–60(–70) cm altus, olivaceus, inferne rubro-brunneus, subtiliter striatus, phyllopodus, pilis simplicibus inferne modice densis, 3–4 mm longis, mollis, albis, subplumosis, sursum sparsis, pilis glanduliferis nullis, pilis stellatisque inferne sparsis, sursum modice densis; *folia rosularia* 3–4, petiolo 2–5 cm longo, viridi vel rubrobrunneo, pilis simplicibus subdensis, subplumosis; *laminae* late ellipticae, 5–6 × 3–4 cm, integerrimae, laminae ad basim cordatae vel rotundatae, apice rotundato, pilis simplicibus sparsis, 1–1,5 mm longis, mollis, albis, dentatis, pilis glanduliferis perparvulis in costa dorsali sparsis, pilis stellatis nullis; *folia caulina* 1–2(–3), inferiore petiolo 2–3 cm longo, ovata apice acuto; laminae basin versus dentatae, color indumentumque ut in foliis basilibus; *synflorescentia* laxe paniculata; *rami* (1–)2–4(–5), stricti, (2–)3–6(–8) cm longi, quisque calathodio 1–2(–3), calathodii (5–)7–9(–12), acladium 2,5–3,5 cm longum; *pedunculum* 1–3



**Fig. 2:** *Hieracium abietopsis* GOTTSCHL. & DUNKEL, specimen.



Fig. 3: *Hieracium caesiolympicum* GOTTSCHL. & DUNKEL, specimen.

bracteis albo-viridibus, pilis simplicibus nullis vel solitariis, pilis glanduliferis subdensis, tenuibus, 0,2–0,6 mm longis, luteis, pilis stellatis densis; *involucrum* 7–9 mm longum, semiglobosum; *involucris phylla* olivacea, pauciserialia, 1–1,1 mm lata, exteriora acuta, interiora cuspidata, pilis simplicibus nullis, pilis glanduliferis modice densis, 0,2–0,7 mm longis, pilis stellatis basin versus in margine subdensis, sursum sparsis, dorso plerumque sparsis; *ligulae* lingulatae, luteae, ligulorum dentes glabri; *styli* lutei papillis nigris, *alveoli* margine breviter dentati; *achaenia* 3 mm longa, atrobrunnea; *florescentia*: finis Iunii ad Iulii.

**H o l o t y p e**: Greece, Eastern Makedonia and Thrace, Nom. Drama, Sidironero, street from Skaloti to Elatia Forest (41°26'41"N 24°16'27"E), moss-rich embankment of the street, 1290 m s. m., 23.06.2019, G. Gottschlich-72601 & F. G. Dunkel-36400, B; Isotypi: UPA, Hb. Gottschlich-72601, Hb. Dunkel-36400.

**T a x o n o m y**: *H. abietopsis* resembles in shape of leaves *H. umbrosum* subsp. *abietinum*. It differs from this species in the subplumose hairs of the petioles. From *H. diaphanoidopsis* (see below 3.1.4) it differs in the slightly cordate leaf blade of the rosette leaves and in the absence of simple hairs on the phyllaries.

### 1.2 *Hieracium caesiolympicum* GOTTSCHL. & DUNKEL, spec. nova (olympicum < bifidum) (Fig. 3, 18b)

**Description**: *Planta* perennis, *rhizoma* subcrassum, obliquum; *caulis* verticalis, rectus, solidus, (40–)45–55(–60) cm altus, olivaceus, inferne rubro-brunneus, subtiliter striatus, phyllopodus, pilis simplicibus inferne modice densis vel subdensis, 3–5 mm longis, rectis, albis, dentatis, sursum modice densis vel sparsis, pilis glanduliferis perparvulis stellatisque sparsis; *folia rosularia* 2–3, petiolo 1,5–3 cm longo, saepe rubroviolaceo, pilis simplicibus subdensis, dentatis; *laminae* ovatae, 6–8(–10) × 2–4 cm, subcoriaceae, indistincte glauco-virides, margine remote denticulato, apice acuto, pilis simplicibus utrimque modice densis, in margine et subtus in costa dorsali subdensis, 2 mm longis, albis, dentatis, pilis glanduliferis perparvulis in costa dorsali sparsis, pilis stellatis tantum in costa dorsali sparsis; *folia caulina* (2–)3–4(–6), ovata, denticulata, inferior iam 1–2 cm supra basi insertum, breviter petiolatum, reliqua petioliformiter attenuata, color indumentumque ut in foliis basalibus; *synflorescentia* laxo racemoso-paniculata; *rami* (2–)3–4(–6), stricti vel arcuato-ascendentes, (2–)4–7(–12) cm longi, quisque calathodio 1–2(–4), calathodii (3–)5–8(–12), acladium 2–3 cm longum; *pedunculum* 1–2 bracteis dilute olivaceis, pilis simplicibus sparsis, 1–1,5 mm longis, subrigidis, basibus atris, pilis glanduliferis sparsis, 0,2–0,3 mm longis, luteis, pilis stellatis subdensis; *involucrum* (10–)11(–12) mm longum, semiglobosum; *involucris phylla* olivacea, pauciserialia, 1 mm lata, acuta, pilis simplicibus modice densis, 1 mm longis, subrigidis, basibus atris, pilis glanduliferis modice sparsis, 0,3–0,5(–0,8) mm longis, pilis stellatis in margine densis, dorso modice densis vel sparsis; *ligulae* lingulatae, luteae, ligulorum dentes glabri; *styli* lutei, *alveoli* margine ciliati; *achaenia* 3 mm longa, atrobrunnea; *florescentia*: finis Iunii ad Iulii.

**H o l o t y p e**: Greece, Eastern Makedonia and Thrace, Nom. Xanthi, between Lykodromio and Ag. Georgios (41°14'22"N 24°45'51"E), shrubbery, 550 m s. m., 24.06.2019, G. Gottschlich-72651 & F. G. Dunkel-36401, B; Isotypi: Hieracia Eu-

ropaea Selecta No. 801 (FI, FR, H, IBF, LI, M, MSTR, PAL, UPA, W, Hb. Gottschlich-70162, Hb. Brandstätter, Hb. Dunkel-36401).

**Specimens seen**: Nom. Drama, Mount Falakro, roadway from Falakro to Pirgi (41°15'49"N 24°00'58"E), sandstone embankment with young pines, 830 m s.m., 21.06.2019, G. Gottschlich-72501 & F. G. Dunkel-36402; Nom. Drama, street between Mikromilia and Birch-Forest/Forest of Simida (41°26'42"N 24°09'00"E), embankment of the street under deciduous forest, 830 m s.m., 22.06.2019, G. Gottschlich-72512 & F. G. Dunkel-36403; do. (41°26'57"N 24°09'00"E), granite detritus, 870 m s.m., 22.06.2019, G. Gottschlich-72516 & F. G. Dunkel-36404.

**T a x o n o m y**: Due to the number of stem leaves, leaf shape and the greyish capitula, *H. caesiolympicum* looks like *H. caesium*, occurring in Central and Northern Europe. However, the subrigid simple hairs and the little coriaceous leaves may support the hypothesis of an introgression from *H. olympicum*, which is not rare in the area. It is difficult to declare the second parent. The epithet *caesiolympicum* should only recall the growth form.

### 1.3 *Hieracium bractolympicum* GOTTSCHL. & DUNKEL, spec. nova (olympicum > bracteolatum vel sermenikense – olympicum) (Fig. 4, 18c)

**Description**: *Planta* perennis, *rhizoma* subcrassum, obliquum; *caulis* verticalis, rectus, solidus, (40–)70–80(–90) cm altus, olivaceus, inferne rubro-brunneus, subtiliter striatus, aphyllododus vel hypophyllopodus, pilis simplicibus inferne densis, subvillosis, 5–7 mm longis, mollis, albis, dentatis, sursum modice densis, pilis glanduliferis perparvulis sparsis, pilis stellatis inferne nullis sursum sparsis; *folia caulina* 10–15, inferiora saepe dense conferta vel pseudorosulata, longe petiolata, petiolo 4–9 cm longo, viridi vel rubrobrunneo, pilis simplicibus densis, dentatis; *laminae* ellipticae vel late lanceolatae, apice acuto, 7–17 × 3–6 cm, basin versus longe angustaque serrato-dentatae, molles, virides, saepe indistincte maculatae, pilis simplicibus densis, 2–4 mm longis, pilis stellatis nullis, margo et costa dorsali pilis glanduliferis perparvulis sparsis, folia superiora cito decrescentia vel reducta, breve petiolata vel sessilia; *synflorescentia* laxo paniculata vel racemoso-paniculata; *rami* 4–7, stricti vel arcuato-ascendentes, 2–5(–8) cm longi, quisque calathodio 1–2(–3), calathodii 5–10(–13), acladium 4–7 cm longum; *pedunculum* 4–6 bracteis albo-viridibus, pilis simplicibus nullis vel solitariis, 3 mm longis, infra medium atris, pilis glanduliferis nullis, pilis stellatis densis; *involucrum* 11–13 mm longum, cylindrico-ellipsoideum; *involucris phylla* dilute viridia, albo-marginata, pluriserialia, 1–1,3 mm lata, obtusa, pilis simplicibus modice densis, basin versus atris, 1,5–2 mm longis, pilis glanduliferis nullis vel solitariis, pilis stellatis densis (capitulum cum aspectu griseo); *ligulae* lingulatae, luteae, ligulorum dentes glabri; *styli* lutei, *alveoli* margine longe dentati; *achaenia* 3 mm longa, straminea; *florescentia*: Iulii.

**H o l o t y p e**: Greece, Central Makedonia, Nom. Chalkidiki, Mount Cholomon, Arnea, beginning of the street to Taxiarchis (40°29'10"N 23°35'09"E), shrubbery with young *Castanea sativa*, 651 m s. m., 15.07.2018, G. Gottschlich-70362 & F. G. Dunkel-35628, B; Isotypi: UPA, W, Hb. Gottschlich-70362, Hb. Dunkel-35628.



Fig. 4: *Hieracium bractolympicum* GOTTSCHL. & DUNKEL, specimen.

**Taxonomy:** The greyish capitula point to *H. olympicum*, the short peduncles with many bracts, the spotted and sharply dentate leaves to *H. bracteolatum* or *H. sermenikense*, both not rare in the area. *H. scamandris*, characterized by ZAHN (1921–23: 971) as “olympicum – bracteolatum” shows more affinity to *H. bracteolatum* (Lectotype: P. Sintenis, Iter Trojanum 1883, No. 802, LD!) and can better be regarded as “bracteolatum > olympicum”.

**1.4 *Hieracium diaphanoidopsis* GOTTSCHL. & DUNKEL, spec. nova** (pyrgosense – murorum) (Fig. 5, 18d)

**Description:** *Planta* perennis, *rhizoma* subcrassum, obliquum; *caulis* verticalis, rectus, solidus, (50–)60–70(–80) cm altus, olivaceus, inferne rubro-brunneus, subtiliter striatus, phyllopodus, pilis simplicibus inferne modice densis vel subdensis, 3–4 mm longis, mollis, albis, subplumosis sursum sparsis vel solitariis, pilis glanduliferis perparvulis stellatisque sparsis; *folia rosularia* 3–5, petiolo 2–5 cm longo, viridi vel rubrobrunneo, pilis simplicibus subdensis, subplumosis; *laminae* exteriorum subrotundatae vel late ellipticae, 3–5 × 3–3,5 cm, interiorum late ellipticae, 7–10 × 3–4 cm, molles, virides, margine remote denticulato, basin versus saepe serrato-dentato, apice rotundato vel acuto, pilis simplicibus utrimque modice densis, 1–2 mm longis, mollis, albis, subplumosis, pilis glanduliferis perparvulis in costa dorsali sparsis, pilis stellatis nullis; *folia caulina* 1–2(–3), inferior petiolo 3–5 cm longo, ovata apice acuto; *laminae* basin versus dentatae, color indumentumque ut in foliis basalibus; *synflorescentia* laxa paniculata, rami (1–)2–4(–5), arcuato-ascendentes, (2–)5–8(–12) cm longi, quisque calathodio 1–2(–4), calathodii (5–)7–10(–15), acladium 2–5 cm longum; *pedunculum* 1–3 bracteis albo-viridibus, pilis simplicibus nullis vel solitariis, pilis glanduliferis subdensis, 0,2–0,3 mm longis, luteis, pilis stellatis modice densis; *involucrum* (11–)12–13 mm longum, semiglobosum; *involucri phylla* viridia, pauciserialia, 0,6–0,7 mm lata, acuta, pilis simplicibus modice densis, basin versus atris, 1 mm longis, pilis glanduliferis modice densis, 0,2–0,4(–0,6) mm longis, pilis stellatis in margine sparsis, dorso plerumque nullis; *ligulae* lingulatae, luteae, ligulorum dentes glabri; *styli* lutei, *alveoli* margine breviter dentati; *achaenia* 3 mm longa, dilute atrobrunnea; *florescentia*: finis Iunii ad Iulii.

**Holotype:** Greece, Eastern Makedonia and Thrace, Nom. Kavala, Mount Pageo, street from Eleftheroupoli to the top of Mount Pageo (40°54'26"N 24°08'22"E), calcareous rocks, 1350 m s. m., 25.06.2019, G. Gottschlich-72705 & F. G. Dunkel-36405, B; Isotypi: UPA, Hb. Gottschlich-72705, Hb. Dunkel-36405.

**Specimens seen:** Nom. Drama, Sidironero, from Skaloti to Elatia Forest, above Forest Village (41°30'02"N 24°21'45"E), *Picea* forest, 1380 m s.m., 23.06.2019, G. Gottschlich-72630 & F. G. Dunkel-36406, Hb. Gottschlich-72630, LI, M, Hb. Dunkel-36406.

**Taxonomy:** As the epithet indicates, *H. diaphanoidopsis* resembles *H. diaphanoides* as well in the shape of leaves and in the indument of subdense glandular hairs of peduncles and phyllaries. It differs from this species by subdense subplumose hairs on the lower part of the stem and the petioles of the leaves. This can be interpreted as an introgression of a species from

sect. *Pannosa* into a species of sect. *Vulgata* or sect. *Hieracium*. Corresponding to neighbouring species a former origin by hybridisation from *H. murorum* and *H. pyrgosense* may be assumed.

**1.5 *Hieracium jankolympicum* GOTTSCHL. & DUNKEL, spec. nova** (jankae – olympicum) (Fig. 6, 18e)

**Description:** *Planta* perennis, *rhizoma* subcrassum, obliquum; *caulis* verticalis, rectus, solidus, (40–)50–70(–80) cm altus, olivaceus, inferne rubro-brunneus, subtiliter striatus, phyllopodus, pilis simplicibus inferne densis, 4–6 mm longis, mollis, albis, profunde dentatis vel subplumosis, sursum modice densis, pilis glanduliferis perparvulis sparsis, pilis stellatis inferne sparsis, sursum modice densis; *folia caulina* (10–)13–18(–20), inferiora raro conferta, inferiora petioliformiter contracta, reliqua sessilia; *laminae* inferiorum obovatae, superiorum ovatae, apice acuto, 3–15 × 1–6 cm, remote denticulatae, indistincte glaucovirides, pilis simplicibus densis, 2,5–3,5 mm longis, mollis, profunde dentatis vel subplumosis, pilis stellatis utrimque sparsis, pilis glanduliferis perparvulis in margine et subtus in costa dorsali sparsis; *synflorescentia* laxa paniculata; *rami* (2–)3–6(–8), arco-ascendenti, 5–10(–15) cm longi, quisque calathodio 1–3(–5), calathodii (3–)5–20, acladium 4–6 cm longum; *pedunculum* 2–3 bracteis olivaceis pilis simplicibus densissimis, alibi pilis simplicibus densis, 5–7 mm longis, subrigidis, denticulatis, basin versus griseis, pilis stellatis modice densis, pilis glanduliferis nullis; *involucrum* 9–13 mm longum, campanulatum; *involucri phylla* olivacea, pauciserialia, 1,5 mm lata, acuta, pilis simplicibus densis, 5–6 mm longis, albis, basin versus atris, denticulatis, pilis glanduliferis nullis vel sparsis, pilis stellatis modice densis; *ligulae* lingulatae, luteae, ligulorum dentes glabri; *styli* lutei papillis nigris, *alveoli* margine longe dentati; *achaenia* obscure brunnea; *florescentia*: Iulii ad Augusti.

**Holotype:** Greece, Eastern Makedonia and Thrace, Nom. Xanthi, above Kallithea (41°18'18"N 24°42'59"E), granite rocks, 1350 m s. m., 14.07.2017, G. Gottschlich-68198 & F. G. Dunkel-34603, B; Isotypi: UPA, Hb. Gottschlich-68198, Hb. Dunkel-34603).

**Specimens seen:** Nom. Xanthi, above Kallithea (41°16'46"N 24°44'40"E), beech forest, 1190 m s. m., 14.07.2017, G. Gottschlich-68172 & F. G. Dunkel-34582, B; Isotypi: UPA, Hb. Gottschlich-68172, Hb. Dunkel-34582).

**Taxonomy:** As the epithet indicates, *H. jankolympicum* is intermediate between *H. jankae* and *H. olympicum*, in shape as well as in indument, both species very common in the studied area.

**1.6 *Hieracium pellense* GOTTSCHL. & DUNKEL, spec. nova** (oroglaucum – murorum) (Fig. 7, 18f)

**Description:** *Planta* perennis, *rhizoma* subcrassum, obliquum; *caulis* verticalis, rectus, solidus, (20–)30–40(–50) cm altus, brunneo-viridis, subtiliter striatus, phyllopodus, pilis simplicibus glanduliferisque nullis, pilis stellatis solitariis; *folia rosularia* 3–5, breviter petiolata vel laminae petioliformiter contracta; *laminae* exteriorum late ellipticae, indistincte denticulatae, 3 × 2 cm, interiorum lanceolatae, 2,5–9 × 0,8–1,5 cm, coriaceae, glau-



Fig. 5: *Hieracium diaphanoidopsis* GOTTSCHL. & DUNKEL, specimen.





Fig. 6: *Hieracium jankolypticum* GOTTSCHL. & DUNKEL, specimen.



Fig. 7: *Hieracium pellense* GOTTSCHL. & DUNKEL, specimen.

co-virides, margine tenuiter dentato-serrato, apice cuspidato, pilis simplicibus supra nullis, basin versus modice densis, mollis, albis, 1,5–3 mm longis, pilis glanduliferis stellatisque nullis; *folium caulinum* unum, anguste lanceolatum, integerrimum, vel denticulatum, raro tenuiter dentatum, glabrum; *synflorescentia* laxa paniculata; *rami* (2–)3–4(–5), arcuato-ascendentes, tenues, 3–10(–15) cm longi, quisque calathodio 1–4, calathodii (7–)10–15(–20), acladium 2–3 cm longum; *pedunculum* tenue, diametro 0,6 mm, 1–3 bracteis atroviridibus, pilis simplicibus sparsis, 1 mm longis, albis, pilis glanduliferis solitariis, 0,3 mm longis, pilis stellatis sparsis; *involucrum* 10–11 mm longum, anguste campanulata; *involucri phylla* atroviridia, albomarginata, pauciserialia, 0,9 mm lata, acuta, interiora cuspidata, pilis simplicibus modice densis, basin versus atris, 1 mm longis, pilis glanduliferis modice densis, 0,2–0,6 mm longis, pilis stellatis in margine basin versus sparsis vel modice densis, dorso plerumque nullis; *ligulae* lingulatae, luteae, ligulorum dentes glabri; *styli* subobscuri, *alveoli* margine breviter dentati; *achaenia* non vidi; *florescentia*: finis Iunii ad Iulii.

**Holotype**: Greece, Central Makedonia, Nom. Pella, Mount Kajmaktsalan, street from ski center in direction to Edessa (40°53'34"N 21°50'49"E), calcareous macadam along the street, 1790 m s. m., 18.06.2019, G. Gottschlich-72370 & F. G. Dunkel-36407, B; Isotypi: UPA, Hb. Gottschlich-72370, Hb. Dunkel-36407.

**Eponomy**: The epithet refers to the district Pella.

**Taxonomy**: In the shape of the leaves *H. pellense* resembles the Alpine *H. oxyodon*. However, instead of *H. glaucum* as one of the assumed parents for *H. oxyodon*, here the neighbouring *H. oroglaucum* could be one of the former parents. Moreover, the indument (due to the absence of stellate hairs on the phyllaries) would support this hypothesis. Furthermore, *H. pellense* resembles *H. stenoglossophyllum* from the Korab Mountains, but differs from this species by the dentate leaves.

### 1.7 *Hieracium perdentatum* GOTTSCHL. & DUNKEL, **spec. nova** (sermenikense – murorum) (Fig. 8, 19a)

**Description**: *Planta* perennis, *rhizoma* subcrassum, obliquum; *caulis* verticalis, rectus, solidus, (40–)50–60(–70) cm altus, olivaceus, inferne rubro-brunneus, subtiliter striatus, phyllopodus, pilis simplicibus sparsis, 1,5–2,5 mm longis, mollis, albis, pilis glanduliferis nullis, pilis stellatis inferne nullis, sursum sparsis; *folia rosularia* 3–5, petiolo 3–7 cm longo, viridi vel rubrobrunneo, pilis simplicibus sparsis vel modice densis; *laminae* ellipticae, (3–)6–10(–12) × (1,5–)2–4 cm, olivaceae, indistincte vel distincte maculatae, margine longe serrato-dentato, basin versus cuneatae, apice acuto, pilis simplicibus supra sparsis, 0,3–0,5 mm longis, in margine modice densis, 1–1,5 mm longis, subtus in costa dorsali subdensis, 1,5–2 mm longis, mollis, albis, pilis glanduliferis stellatisque nullis; *folia caulina* (1–)2(–3), petiolo 1,5–5 cm longo, ovata, apice acuto; *laminae* serrato-dentatae vel dentatae, color indumentumque ut in foliis basalibus; *synflorescentia* laxa paniculata; *rami* (3–)5–8(–10), stricti, (2–)8–20(–25) cm longi, quisque calathodio (2–)3–6(–8), calathodii (10–)25–35(–45), acladium 2–3 cm longum; *pedunculum* 1–3 bracteis dilute-viridibus, tenue, 0,5 cm diametro, pilis simplicibus sparsis, albis, basibus atris, 0,5–0,7 mm lon-

gis, pilis glanduliferis modice densis, 0,3–0,5 mm longis, pilis stellatis sparsis; *involucrum* 7–8 mm longum, anguste campanulatum; *involucri phylla* olivacea, albo-marginata, pauciserialia, 0,6–0,7 mm lata, acuta, pilis simplicibus sparsis, basin versus atris, 0,6–0,8 mm longis, pilis glanduliferis sparsis vel modice densis, 0,3–0,4 mm longis, pilis stellatis in margine subdensis, dorso sparsis; *ligulae* lingulatae, luteae, ligulorum dentes glabri; *styli* lutei, *alveoli* margine breviter dentati; *achaenia* 3 mm longa, dilute atrobunnea; *florescentia*: Iunii.

**Holotype**: Greece, Central Makedonia, Nom. Chalkidiki, Mount Cholomon, street from Arnea to Taxiarchis (40°27'41"N 23°31'39"E), *Rubus* shrubbery along the street, 1010 m s. m., 25.06.2019, G. Gottschlich-72726 & F. G. Dunkel-36408, B; Isotypi: Hb. Gottschlich-72726, Hb. Dunkel-36408.

**Taxonomy**: *H. perdentatum* resembles in its shape *H. pseudolachenalii*, but differs in a minor number of stem leaves and especially in the serrate-dentate leaf blades which may have the origin in *H. sermenikense*, growing in the same area. The little capitula point to *H. bracteolatum*, which is very common in the area.

### 1.8 *Hieracium thessalonikense* GOTTSCHL. & DUNKEL, **spec. nova** (pseudolachenalii > chalcidicum) (Fig. 9, 19b)

**Description**: *Planta* perennis, *rhizoma* subcrassum, obliquum; *caulis* verticalis, rectus, solidus, (40–)50–80(–100) cm altus, olivaceus, inferne rubro-brunneus, subtiliter striatus, aphyllopodus vel hypophyllopodus, pilis simplicibus inferne densis, 1,5–2,5 mm longis, mollis, albis, profunde dentatis vel subplumosis, sursum modice densis vel sparsis, pilis glanduliferis perparvulis sparsis, pilis stellatis inferne sparsis, sursum modice densis; *folia caulina* 10–20, inferiora raro conferta, petiolo 3–5 cm longo, viridi vel rubrobrunneo, pilis simplicibus densis, profunde dentatis vel subplumosis; *laminae* inferiorum ellipticae, superiorum ovatae, apice acuto, 2–12 × 1–4 cm, remote dentatae, subcoriaceae, obscure virides, distincte maculatae, pilis simplicibus supra sparsis, 1,5–2 mm longis, subtus subdensis, pilis stellatis subtus sparsis, pilis glanduliferis perparvulis subtus in costa dorsali sparsis; *synflorescentia* laxa paniculata; *rami* (3–)5–7(–9), stricti, 5–10(–15) cm longi, quisque calathodio 1–3(–4), calathodii (3–)5–20, acladium 4–6 cm longum; *pedunculum* 3–5 bracteis dilute viridibus, pilis simplicibus glanduliferisque nullis, pilis stellatis modice densis vel densis; *involucrum* 8–10 mm longum, semiellipsoideum; *involucri phylla* olivacea, pauciserialia, 0,9–1 mm lata, subacuta vel subobtusa, pilis simplicibus sparsis, 1,5–2 mm longis, pilis glanduliferis modice densis, 0,2–0,6 mm longis, pilis stellatis sparsis; *ligulae* lingulatae, luteae, ligulorum dentes glabri; *styli* lutei papillis nigris, *alveoli* margine longe dentati; *achaenia* non vidi; *florescentia*: Iulii ad Augusti.

**Holotype**: Greece, Central Makedonia, Nom. Thessaloniki, Mount Chortiata, Kisson, near prohibited zone of the broadcast station (40°35'51"N 23°06'18"E), oak forest, 934 m s. m., 11.07.2018, G. Gottschlich-70162, B; Isotypi: Hieracia Europaea Selecta No. 803 (FI, FR, H, IBF, LI, M, MSTR, PAL, UPA, W, Hb. Gottschlich-70162, Hb. Brandstätter, Hb. Dunkel).

**Taxonomy**: The leaves of *H. thessalonikense* resemble morphologically those of *H. pseudolachenalii*, however, the dense



Fig. 8: *Hieracium perdentatum* GOTTSCHL. & DUNKEL, specimen.



Fig. 9: *Hieracium thessalonikense* GOTTSCHL. & DUNKEL, specimen.

indument of strong dentate to subplumose simple hairs shows affinities to *H. chalcidicum* which has its „locus classicus“ in this area.

Within the commonly used formulas, *H. thessalonikense* would be treated as “pseudolachenalii > chalcidicum”.

### 1.9 *Hieracium vermiense* GOTTSCHL. & DUNKEL, **spec. nova** (pannosum(?) < bifidum(?)) (Fig. 10, 19c)

**Description:** *Planta* perennis, *rhizoma* subcrassum, obliquum; *caulis* verticalis, rectus, solidus, (30–)40–50(–60) cm altus, viridis, inferne rubro-violaceus, subtiliter striatus, phyllopodus, pilis simplicibus inferne sparsis, 2–3 mm longis, mollis, profunde dentatis vel subplumosis, pilis glanduliferis stellatisque nullis, superne pilis simplicibus sparsis 1 mm longis, dentatis, pilis glanduliferis nullis; *folia rosularia* 2–4, petiolo 3–5 cm longo, rubro-violaceo, pilis simplicibus subdensis vel densis, mollis, profunde dentatis vel subplumosis, pilis glanduliferis perparvulis sparsis, pilis stellatis nullis; *laminae* anguste ellipticae, integerrimae vel indistincte denticulatae, 5–10 × 2–2,5 cm, molles, virides vel glauco-virides, pilis simplicibus supra sparsis, 1 mm longis, in margine et subtus in costa dorsali modice densis, mollis, albis, 1–1,5 mm longis, profunde dentatis vel subplumosis, pilis glanduliferis stellatisque nullis; *folium caulinum* unum, anguste ovatum, breviter petiolatum, integerrimum, color indumentumque ut in foliis basalibus; *synflorescentia* racemosa, raro racemoso-paniculata; *rami* 2–4, (2–)4–6(–10) cm longi, stricti, quisque calathodio 1(–2), calathodii (2–)3–4(–6), acladium 1,5–4 cm longum; *pedunculum* 1–2 bracteis atroviridibus, pilis simplicibus modice densis, 1 mm longis, albis, infra medium atris, pilis glanduliferis solitariis, 0,3 mm longis, pilis stellatis modice densis vel subdensis; *involucrum* 13–15 mm longum, semiglobosum; *involucri phylla* olivacea margine dilute olivaceo, pauciserialia, 1 mm lata, acuta, interiora cuspidata, pilis simplicibus densis, basin versus atris, 1,5–2 mm longis, pilis glanduliferis nullis, pilis stellatis in margine subdensis, dorso sparsis; *ligulae* lingulatae, luteae, ligulorum dentes glabri; *styli* lutei, *alveoli* margine breviter dentati; *achaenia* 3 mm longa, rubro-brunnea; *florescentia*: Iunii.

**Holotype:** Greece, Central Makedonia, Nom. Imathia, Mount Vermio, N Kato Vermio (40°33'57"N 22°01'36"E), embankment of calcareous rocks along the street, 1390 m s. m., 17.06.2019, G. Gottschlich-72322 & F. G. Dunkel-36378, B; Isotypi: Hieracia Europaea Selecta No. 804 (FI, FR, H, IBF, LI, M, MSTR, PAL, UPA, W, Hb. Gottschlich-72322, Hb. Brandstätter, Hb. Dunkel-36378).

**Taxonomy:** *H. pellense* resembles the Alpine *H. pallescens*, which corresponds to the morphological feature „bifidum ≥ villosum“. However, according to the indument of subplumose simple hairs, in *H. pellense* the *villosum* part must be replaced by a species of sect. *Pannosa*. Whether the second parent is *H. bifidum* or another similar species is difficult to decide. In any case, because of its petiolate more thinner and more glabrous rosette leaves, *H. pellense* is different from *H. phocaicum* (type WU!), to which is attributed a similar morphological formula („pannosum < bifidum (?)“ (ZAHN 1922–38).

### 1.10 *Pilosella pieriana* GOTTSCHL. & DUNKEL, **spec. nova** (onegensis – pavichii) (Fig. 11, 19d)

**Description:** *Planta* perennis, *rhizoma* subcrassum, obliquum; *caulis* verticalis, rectus, solidus, (25–)30–40(–45) cm altus, viridis, subtiliter striatus, phyllopodus, pilis simplicibus modice densis, 3–4 mm longis, mollis, pilis glanduliferis nullis, pilis stellatis sparsis; *folia rosularia* 5–7, basin versus petioliformiter attenuata, anguste obovata vel lanceolata, integerrima, 3–10 × 0,8–1,1 cm, mollia, viridia, pilis simplicibus utrimque modice densis, mollis, albis, 2–3 mm longis, pilis glanduliferis nullis, pilis stellatis subtus sparsis; *folia caulina* 1–3, anguste lanceolata, color indumentumque ut in foliis basalibus; *synflorescentia* laxa paniculata; *rami* 3–5, stricti vel arcuato-ascendentes, (1–)2–10(–15) cm longi, quisque calathodio (1–)2–5(–7), calathodii 7–15(–20), acladium 1–2 cm longum; *pedunculum* 1–2 bracteis viridibus, pilis simplicibus modice densis vel sparsis, 1–2 mm longis, albis vel infra medium griseis, pilis glanduliferis modice densis, 0,2 mm longis, luteis, pilis stellatis modice densis vel subdensis; *involucrum* 5 mm longum, cylindrico-campanulata; *involucri phylla* viridia margine late albo-marginato, pauciserialia, 0,7–0,8 mm lata, acuta, pilis simplicibus subdensis, albis vel griseis, basin versus atris, 1,5–2 mm longis, pilis glanduliferis modice densis, pilis stellatis dorso sparsis; *ligulae* lingulatae, luteae, ligulorum dentes glabri; *styli* lutei, *alveoli* margine breviter dentati; *achaenia* 2 mm longa, atrobunnea; *florescentia*: Iunii.

**Holotype:** Greece, Western Makedonia, Nom. Kozani, Mount Pieria, from Katafigi to the top of the mountain (40°15'07"N 22°10'06"E), damp place under pines, 1780 m s. m., 13.07.2017, G. Gottschlich-68144 & F. G. Dunkel-34577, B; Isotypi: UPA, Hb. Gottschlich-68144, Hb. Dunkel-34577).

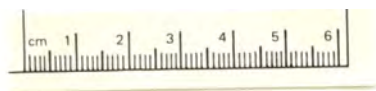
**Specimens seen:** Nom. Kozani, Mount Pieria, from Katafigi to the top of the mountain (40°15'12"N 22°10'00"E), damp place under pines, 1700 m s. m., 13.07.2017. G. Gottschlich-68139 & F. G. Dunkel-34574, Hb. Gottschlich-68139, Hb. Dunkel-34574).

**Taxonomy:** *P. pieriana* occurs together with *P. onegensis* and *P. pavichii*. It differs from *P. pavichii* in the denser indument of simple hairs and from *P. onegensis* in the less dense indument of simple hairs. The color of leaves is quite intermediate between *P. pavichii* (blueish-green) and *P. onegensis* (grass-green).

## 2 New subspecies

### 2.1 *Hieracium diaphanoidopsis* subsp. *volakasense* GOTTSCHL. & DUNKEL, **subsp. nova** (Fig. 12, 19e)

**Description:** *Planta* perennis, *rhizoma* subcrassum, obliquum; *caulis* verticalis, rectus, solidus, (50–)60–70(–80) cm altus, olivaceus, inferne rubro-brunneus, subtiliter striatus, phyllopodus, pilis simplicibus inferne modice densis vel subdensis, 3–4 mm longis, mollis, albis, subplumosis, sursum sparsis vel solitariis, pilis glanduliferis perparvulis stellatisque sparsis; *folia rosularia* 3–5, petiolo 2–4 cm longo, viridi vel rubrobrunneo, pilis simplicibus subdensis, subplumosis; *laminae* anguste ellipticae vel late lanceolatae, 4–6 × 1,5–2,5 cm, molles, virides, margine remote denticulato, apice subacuto, pilis simplicibus



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Fig. 10: *Hieracium vermiense* GOTTSCHL. & DUNKEL, specimen.



Fig. 11: *Pilosella pieriana* GOTTSCHL. & DUNKEL, specimen.





Fig. 12: *Hieracium diaphanoidopsis* subsp. *volakasense* GOTTSCHL. & DUNKEL, specimen.

utrimque modice densis, 1–2 mm longis, mollis, albis, subplumosis, pilis glanduliferis perparvulis in costa dorsali sparsis, pilis stellatis nullis; *folia caulina* 2–3(–4), inferiora petiolo 1–2 cm longo, anguste obovata, apice acuto, laminae basin versus dentatae, color indumentumque ut in foliis basalibus; *synflorescentia* laxe racemoso-paniculata; *rami* (1–)2–3(–5), stricti vel arcuato-ascendentes, (2–)5–10(–15) cm longi, quisque calathodio 1–2(–3), calathodii (2–)3–7(–10), acladium 2–5 cm longum; *pedunculum* 1–3 bracteis albo-viridibus, pilis simplicibus glanduliferisque sparsis, pilis stellatis densis; *involucrum* 10–11 mm longum, semiglobosum; *involucri phylla* viridia, pauciserialia, 0,6–0,7 mm lata, acuta, pilis simplicibus modice densis basibus atris, 1–1,5 mm longis, pilis glanduliferis sparsis, 0,2–0,3 mm longis, pilis stellatis in margine densis, dorso sparsis; *ligulae* lingulatae, luteae, ligulorum dentes glabri; *styli* lutei papillis nigris, *alveoli* margine breviter dentati; *achaenia* 3 mm longa, dilute atrobrunnea; *florescentia*: Iunii.

**Holotype**: Greece, Eastern Makedonia and Thrace, Nom. Drama, Mount Falakro, street to ski center Falakro (41°17'46"N 24°00'11"E), calcareous rocks under beech forest, 1050 m s. m., 21.06.2019, G. Gottschlich-72493 & F. G. Dunkel-36409, B; Isotypi: Hieracia Europaea Selecta No. 805 (FI, FR, H, IBF, LI, M, MSTR, PAL, UPA, W, Hb. Gottschlich-72493, Hb. Brandstätter, Hb. Dunkel-36409).

**Specimens seen**: Nom. Drama, Mount Falakro, street to ski center Falakro, beginning of the sideroad to Volakas (41°18'16"N 23°59'43"E), shaded calcareous rocks, 1000 m s. m., 13.07.2018, G. Gottschlich-70193 & F. G. Dunkel-36410, Hb. Gottschlich-70193, Hb. Dunkel-36410; do., 13.07.2018, G. Gottschlich-70197+98 & F. G. Dunkel-36411, Hb. Gottschlich-70197+98, Hb. Dunkel-36411; do., 21.06.2019, G. Gottschlich-72481 & F. G. Dunkel-36412, Hb. Gottschlich-72481, Hb. Dunkel-36412; street to ski center Falakro, (41°17'56"N 23°59'52"E), calcareous rocks, 1020 m s. m., 21.06.2019, G. Gottschlich-72490 & F. G. Dunkel-36413, Hb. Gottschlich-72490, Hb. Dunkel-36413; SE Volakas, street to ski center (41°17'55"N 23°59'55"E), stony embankment of the street, 07.07.2013, L. Meierott-2013-634 Hb. Meierott-2013-634, Hb. Gottschlich-59781; street to ski center Falakro, (41°17'50"N 24°00'18"E), calcareous rocks under beech forest, 1070 m s. m., 21.06.2019, G. Gottschlich-72496 & F. G. Dunkel-36414, Hb. Gottschlich-72496, Hb. Dunkel-36414; street between Volakas and Potami (41°22'41"N 24°02'05"E), mica slade, 480 m s. m., 22.06.2019, G. Gottschlich-72527 & F. G. Dunkel-36415, Hb. Gottschlich-72527, Hb. Dunkel-36415.

**Eponymy**: The epithet refers to the village Volakas, the main ski center of Mount Falakro.

**Taxonomy**: Different from the type subspecies (see above) by narrower leaves, less intensity of glandular hairs on peduncles and more stellate hairs on the phyllaries.

## 2.2 *Hieracium hypochoeroides* subsp. *paikoanum*

GOTTSCHL. & DUNKEL, **subsp. nova** (Fig. 13, 19f)

**Description**: *Planta* perennis, *rhizoma* subcrassum, obliquum; *caulis* verticalis, rectus, solidus, (40–)50–60(–70) cm altus, olivaceus vel rubrobrunneus, subtiliter striatus, phyllopo-

dus, pilis simplicibus sparsis, 1 mm longis, mollis, albis, pilis glanduliferis nullis, pilis stellatis sparsis; *folia rosularia* 4–5, petiolo 2–6 cm longo, viridi vel rubrobrunneo, pilis simplicibus modice densis, dentatis, pilis glanduliferis perparvulis stellatisque sparsis; *laminae* ovatae, 4–9 × 2–5 cm, glauco-virides, denticulatae, ad basim truncatae, apice apiculata, pilis simplicibus supra tantum marginem versus sparsis, 1–2 mm longis, curvatis, pilis glanduliferis perparvulis stellatisque in costa dorsali sparsis; *folium caulinum* nullum vel unum, inde reductum; *synflorescentia* laxe racemoso-paniculata; *rami* (1–)2–3(–4), stricti, (2–)5–10(–15) cm longi, quisque calathodio 1–2(–4), calathodii (2–)4–6(–8), acladium 2,5–3,5 cm longum; *pedunculum* 1–2 bracteis obscure olivaceis, pilis simplicibus nullis, pilis glanduliferis subdensis, 0,5–0,8 mm longis, validis, nigris, pilis stellatis modice densis; *involucrum* 10–12 mm longum, semiglobosum vel semiellipsoideum; *involucri phylla* obscure olivacea, dilute marginata, pauciserialia, 1 mm lata, acuta, pilis simplicibus sparsis vel modice densis, 1–1,5 mm longis, infra medium atris, pilis glanduliferis modice densis, 0,4–0,6 mm longis, pilis stellatis in margine subdensis, dorso sparsis; *ligulae* lingulatae, luteae, ligulorum dentes glabri; *styli* lutei, *alveoli* margine breviter dentati; *achaenia* 3 mm longa, atrobrunnea; *florescentia*: Iunii.

**Holotype**: Greece, Central Makedonia, Nom. Kilkis, Mount Paiko, street south of Livadia near the lookout point (40°59'22"N 22°20'48"E), rocky embankment of the street, limestone, 1110 m s. m., 19.06.2019, G. Gottschlich-72391 & F. G. Dunkel-36416, B; Isotypi: Hieracia Europaea Selecta No. 806 (FI, FR, H, IBF, LI, M, MSTR, PAL, UPA, W, Hb. Gottschlich-72391, Hb. Brandstätter, Hb. Dunkel-36416).

**Specimens seen**: Nom. Kilkis, Mount Paiko, street south of Livadia (40°59'18"N 22°21'11"E), at the edge of a beech forest, 1110 m s. m., 19.06.2019, G. Gottschlich-72392 & F. G. Dunkel-36417, Hieracia Europaea Selecta No. 807 (B, FI, FR, H, IBF, LI, M, MSTR, PAL, UPA, W, Hb. Gottschlich-72392, Hb. Brandstätter, Hb. Dunkel-36417).

**Taxonomy**: *H. hypochoeroides* is a collective species to which taxa are classified which are intermediate in their morphological features between *H. bifidum* and *H. schmidtii*. Most of them occur in the Western Alps. Hitherto only *H. hypochoeroides* subsp. *epirensis*, subsp. *kyllense* and subsp. *retroversidens* are recorded from Greece (DIMOPOULOS & al. 2013). From these taxa, *H. hypochoeroides* subsp. *paikoanum* differs in shape of leaves as well as in kind of indument. It resembles *H. hypochoeroides* subsp. *semicinascens* from Central Germany but differs in having more ovate leaves.

## 2.3 *Hieracium pseudosparium* subsp. *elatianum*

GOTTSCHL. & DUNKEL, **subsp. nova** (Fig. 14, 20a)

**Description**: *Planta* perennis, *rhizoma* subcrassum, obliquum; *caulis* verticalis, rectus, solidus, (60–)70–90(–100) cm altus, olivaceus, inferne rubro-brunneus, subtiliter striatus, aphyllopodus, pilis simplicibus sparsis, 1–2 mm longis, mollis, albis, pilis glanduliferis nullis, pilis stellatis sparsis vel solitariis; *folia caulina* (10–)12–15(–18), inferiora alato-petiolata, petiolo 1–4 cm longo, reliqua cuneato- vel rotundato-sessilia, obscure viridia, papyraceiformia, plusminusque lucida, supra glabra, subtus pilis stellatis sparsis, in costa dorsali modice densis; *laminae* in-



**Fig. 13:** *Hieracium hypochoeroides* subsp. *paikoanum* GOTTSCHL. & DUNKEL, specimen.



Fig. 14: *Hieracium pseudosparsum* subsp. *elatianum* GOTTSCHL. & DUNKEL, specimen.

feriorum anguste ellipticae vel late lanceolatae, 6–13 × 1,5–4 cm, breviter dentatae, apice acuto, superiorum anguste ovate vel reductae, 1–4 × 0,2–1 cm, denticulatae; *synflorescentia* laxa paniculata; *rami* (5–)7–9(–11), stricti, quisque calathodio 3–6, calathodii (20–)25–35(–45); *pedunculum* 1–3 bracteis olivaceis, pilis stellatis densis, pilis simplicibus glanduliferisque nullis; *involucrum* ca. 10 mm longum; *involucri phylla* olivacea, pauciserialia, 0,8 mm lata, acuta, pilis stellatis sparsis, pilis simplicibus glanduliferisque nullis; *ligulae* lingulatae, luteae, ligulorum dentes glabri; *styli*, *alveoli* et *achaenia* non vidi; *florescentia*: Iulii.

**Holotype**: Greece, Eastern Makedonia and Thrace, Nom. Drama, Sideronero, street from Skaloti to Elatia forest, above Forest Village (41°30'35"N 24°23'49"E), genista shrubbery on granite detritus, 1200 m s. m., 23.06.2019, G. Gottschlich-72239 & F. G. Dunkel-36418, B; Isotypi: Hb. Gottschlich-72639, Hb. Dunkel-36418.

**Specimens seen**: Greece, Eastern Makedonia and Thrace, Nom. Drama, Sidironero, street from Skaloti to Elatia forest (41°28'08"N 24°19'16"E), beech forest, 1581 m s.m., 15.07.2018, G. Gottschlich-70274 & F. G. Dunkel, Hb. Gottschlich-70274.

**Taxonomy**: *H. pseudosparsum* R. UECHTR. ex ZAHN was described from Batak in Bulgaria (ZAHN 1909). Later, Zahn classified this species as subsp. *gandogeri* ZAHN under *H. muricellum* (ZAHN 1921–23). However, *H. muricellum* Fr. belongs to *Picris hieracioides*, as stated by NIKOLAEV (1989). In his last monography (ZAHN 1922–38), he treated it on the species level as *H. gandogeri*. Because he added *H. pseudosparsum* as a synonym, this is an illegitimate name. In the current use, *H. pseudosparsum* is classified as *H. caucasiense* subsp. *gandogeri* (ZAHN) GREUTER. (EURO+MED 2006–). A comparison of the types of *H. caucasiense* (Flora Rossica Exsiccatae No. 2067, BP!, LY!, WU!) with the type of *H. pseudosparsum* (lectotype selected and illustrated by SZELĄG (2015), a cultivated plant in much better condition in BREM!), shows that *H. caucasiense* is quite more robust and much hairier than *H. pseudosparsum*.

Therefore, it seems wiser to separate the European taxa from the caucasian *H. caucasiense*.

*H. pseudosparsum* subsp. *elatianum* differs from the Bulgarian type in its more elliptical leaf shape and stronger dentate leaf margins.

#### 2.4 *Hieracium retyezatense* subsp. *macilentoides*

GOTTSCHL. & DUNKEL, **subsp. nova** (Fig. 15, 20b)

**Description**: *Planta* perennis, *rhizoma* subcrassum, obliquum; *caulis* verticalis, rectus, solidus, (30–)40–60(–70) cm altus, olivaceus, inferne rubro-brunneus, subtiliter striatus, phyllopodus, pilis simplicibus sparsis, 1–2,5 mm longis, mollis, albis, pilis glanduliferis perparvulis stellatisque sparsis; *folia rosularia* 2–5, petiolo 3–6 cm longo, viridi vel rubrobrunneo, pilis simplicibus modice densis, mollis, dentatis, pilis glanduliferis stellatisque nullis; *laminae* ellipticae vel obovatae, 4–10 × 2–5 cm, molles, obscure virides, integerrimae vel denticulatae vel basin versus remote breviterque serrato-dentatae, apice rotundato vel acuto, pilis simplicibus tantum in margine et subtus in costa dorsali sparsis, 1 mm longis, pilis glanduliferis perparvulis in costa

dorsali sparsis, pilis stellatis nullis; *folia caulina* 2(–3), alato-petiolata; *laminae* late lanceolatae, serrato-dentatae, colore indumentoque ut in foliis basalibus; *synflorescentia* laxa paniculata; *rami* 3–6, stricti vel arcuato-ascendentes, (2–)5–15(–30) cm longi, quisque calathodio (1–)2–4(–6), calathodii (5–)7–15(–30), acladium 1–3 cm longum; *pedunculum* 1–2 bracteis olivaceis, pilis simplicibus sparsis, 1 mm longis, infra medium atris, pilis glanduliferis sparsis vel modice densis, 0,3–0,8 mm longis, luteis, pilis stellatis modice densis vel densis; *involucrum* 9–10 mm longum, campanulatum; *involucri phylla* obscure olivacea, dilute marginata, pauciserialia, 1 mm lata, acuta, pilis simplicibus modice densis, 1,5–2 mm longis, infra medium atris, pilis glanduliferis modice densis, 0,3–1 mm longis, pilis stellatis in margine modice densis vel subdensis, dorso sparsis; *ligulae* lingulatae, luteae, ligulorum dentes glabri; *styli* lutei papillis nigris, *alveoli* margine breviter dentati; *achaenia* 3 mm longa, atrobrunnea; *florescentia*: finis Iunii ad Iulii.

**Holotype**: Greece, Eastern Makedonia and Thrace, Nom. Xanthi, Lykodromio, between Ag. Georgios and Mount Erymanthos (41°18'12"N 24°43'42"E), granite detritus, 1350 m s. m., 24.06.2019, G. Gottschlich-72671 & F. G. Dunkel-36419, B; Isotypi: Hieracia Europaea Selecta No. 808 (FI, FR, H, IBF, LI, M, MSTR, PAL, UPA, W, Hb. Gottschlich-72671, Hb. Brandstätter, Hb. Dunkel-36419).

**Taxonomy**: In its conspicuous kind of leaf insertion (+/- winged petiole) on the stem, and as the epithet indicates, *H. retyezatense* subsp. *macilentoides* indicates similarity to the Alpine *H. froelichianum* subsp. *macilentum*. However, other features, such as the number of stem leaves, glandular set and form of the indument, and, last but not least, plant geographical reasons point to a classification of these plants into *H. retyezatense*. They resemble *H. retyezatense* subsp. *urumoffianum*, described from the Pirin Mountains, but differ from this subspecies by a stronger ramification and a higher density of glandular hairs on peduncles and phyllaries.

#### 2.5 *Hieracium retyezatense* subsp. *vrontousense*

GOTTSCHL. & DUNKEL, **subsp. nova** (Fig. 16, 20c)

**Description**: *Planta* perennis, *rhizoma* subcrassum, obliquum; *caulis* verticalis, rectus, solidus, (35–)40–50(–55) cm altus, olivaceus, subtiliter striatus, phyllopodus, pilis simplicibus sparsis, 1,5–2,5 mm longis, mollis, albis, pilis glanduliferis nullis, pilis stellatis inferne nullis, sursum sparsis; *folia rosularia* (2–)3–4, petiolo 2–6 cm longo, viridi, pilis simplicibus modice densis, mollis, dentatis, pilis glanduliferis stellatisque nullis; *laminae* ellipticae vel obovatae, denticulatae vel breviter dentatae, 4–10 × 2–5 cm, molles, virides, apice rotundato vel acuto, pilis simplicibus tantum in margine et subtus in costa dorsali sparsis, 1 mm longis, pilis glanduliferis perparvulis in margine et in costa dorsali sparsis, pilis stellatis nullis; *folia caulina* (0–)1–2, petiolata; *laminae* lanceolatae, denticulatae vel breviter dentatae, color indumentumque ut in foliis basalibus; *synflorescentia* racemoso-paniculata; *rami* 1–2, stricti vel arcuato-ascendentes, 2–7 cm longi, quisque calathodio 1–2(–3), calathodii 2–5(–7), acladium 1,5–2,5 cm longum; *pedunculum* 2–3 bracteis olivaceis, pilis simplicibus nullis, pilis glanduliferis sparsis, 0,1–0,3 mm longis, luteis, pilis stellatis modice densis vel densis; *involucrum* 12–13 mm longum, semiellipsoideum; *involucri phylla* obscure oliva-



Fig. 15: *Hieracium retyezatense* subsp. *macilentoides* GOTTSCHL. & DUNKEL, specimen.



Fig. 16: *Hieracium retyezatense* subsp. *vrontousense* GOTTSCHL. & DUNKEL, specimen.

cea, dilute marginata, pauciserialia, 0,9–1 mm lata, cuspidata, pilis simplicibus solitariis vel nullis, 1,5 mm longis, infra medium atris, pilis glanduliferis sparsis vel modice densis, 0,2–0,5(–0,8) mm longis, pilis stellatis in margine modice densis vel subdensis, dorso sparsis vel subdensis; *ligulae* lingulate, luteae, ligulorum dentes glabri; *styli* lutei, *alveoli* margine breviter dentati; *achaenia* 3 mm longa, atrobrunnea; *florescentia*: finis Iunii ad Iulii.

**H o l o t y p e** : Greece, Central Makedonia, Nom. Serres, Mount Vrontous, ski center Leilas, top region of Profitis Ilias (41°15'N 23°36'E), dwarf-shrubs between granite boulders, 1800 m s. m., 20.06.2019, G. Gottschlich-72442 & F. G. Dunkel-36420, B; Isotypi: UPA, Hb. Gottschlich-72442, Hb. Dunkel-36420).

**T a x o n o m y** : Concerning the shape of leaves and the number of capitula, *H. retyezatense* subsp. *vrontousense* resembles the Bulgarian *H. retyezatense* subsp. *urumoffianum*. It differs from this subspecies in the indument: phyllaries are nearly lacking simple hairs, but presenting a moderate number of glandular hairs.

### 2.6 *Hieracium transiens* subsp. *excentricum* GOTTSCHL. & DUNKEL, subsp. nova (Fig. 17, 20d)

**Description**: *Planta* perennis, *rhizoma* subcrassum, obliquum; *caulis* verticalis, rectus, solidus, (30–)40–50(–60) cm altus, olivaceus, inferne rubro-brunneus, subtiliter striatus, phyllopodus, pilis simplicibus sparsis, 2–2,5 mm longis, mollis, albis, pilis glanduliferis nullis, pilis stellatis inferne nullis, superne sparsis; *folia rosularia* 4–5(–7), alatopetiolata, petiolo 1–5 cm longo, saepe in dentis lacerato, viridi vel rubrobrunneo, pilis simplicibus sparsis vel modice densis, mollis, pilis glanduliferis perparvulis sparsis, laminae ellipticae vel obovatae, (3–)7–15 × 1,5–5 cm, papyraceae, obscure virides, exteriorum foliorum integerrimae vel denticulatae interiorum foliorum infra medium longe in petiolo attenuatae et acute serrato-dentatae, apice rotundato vel acuto, pilis simplicibus glanduliferis perparvulisque tantum in margine et subtus in costa dorsali sparsis, pilis stellatis nullis; *folia caulina* 2(–3), longe attenuata sessilia; *laminae* late lanceolatae vel obovato-lanceolatae, serrato-dentatae, color indumentumque ut in foliis basalibus; *synflorescentia* laxa paniculata; *rami* 3–6, stricti vel arcuato-ascendentes, quisque calathodio (1–)2–3(–4), calathodii (5–)7–10(–15); *pedunculum* 1–2 bracteis olivaceis, pilis simplicibus sparsis, 1 mm longis, pilis glanduliferis sparsis, 0,3 mm longis, pilis stellatis densis; *involucrum* 9–10 mm longum, campanulatum; *involucri phylla* obscure olivacea, dilute marginata, pauciserialia, 1 mm lata, acuta, pilis simplicibus modice densis, 1,5–2 mm longis, basibus atris, pilis glanduliferis modice densis, 0,3–0,5 mm longis, pilis stellatis nullis vel in margine sparsis; *ligulae* lingulate, luteae; *styli*, *alveoli*, *achaenia* non vidi; *florescentia*: finis Iunii ad Iulii.

**H o l o t y p e** : Greece, Western Makedonia, Nom. Florina, Mount Kajmaktalan, street to ski center (40°53'44"N 21°48'22"E), pine shrubby near a stream, granite, 1740 m s. m., 18.06.2019, G. Gottschlich-72360 & F. G. Dunkel-36421, B; Isotypi: UPA, Hb. Gottschlich-72360, Hb. Dunkel-36421.

**T a x o n o m y** : Among the hitherto described infraspecific taxa, *H. transiens* subsp. *excentricum* differs in its divergent shape of basal leaves gradually tapering into its petiole and the long serrate-dentate leaf margin.

### 3 Description of a new section

Regarding the species spectrum of the genus *Hieracium*, a conspicuous phenomenon can be noticed: In many, mostly mountainous, regions a single distinct species dominates the whole area, and there are many taxa, so-called intermediate species which exist closely related in a reticulate pattern and which have obviously been produced by hybridisation events. Such a dominating taxon represents *H. cerinthoides* on the Iberian Peninsula, *H. tomentosum* in the Western Alps, *H. porrifolium* in the Southeastern Alps, *H. grovesianum* in the Apennine, *H. sparsum* in the Carpathians, and finally *H. pannosum*, *H. waldsteinii* and *H. gymnocephalum* in the Balkan Mountains.

Our field studies demonstrate that *H. olympicum* assumes a similar position in Northern Greece. ZAHN (1922–1938) only allowed this taxon the status of an intermediate species. According to the formula given by him – “*heterogynum* < *racemosum*” – he put *H. olympicum* into the sect. *Glaucoformia*, which dominates the Western Balkans together with *H. heterogynum*. In this section, *H. olympicum* is undervalued.

Meanwhile, the known and described intermediate forms of *H. olympicum* justify establishing a new section sect. *Olympica* including *H. olympicum* with some of its (morphological) relatives:

#### Sect. *Olympica* GOTTSCHL. & DUNKEL, sect. nova

**D i a g n o s e** : Distinctissima habito robusto, pilis simplicibus rigidis usque ad 25 mm longis, saepe infra medium atris, involucri pilis stellatis dense obtecto.

**T y p u s** : *Hieracium olympicum* BOISS.

According to present knowledge the following species could be categorized in the section *Olympica*:

*H. argyrotichum* FREYN,  
*H. bractolympicum* GOTTSCHL. & DUNKEL,  
*H. caesioolympicum* GOTTSCHL. & DUNKEL,  
*H. greuteri* GOTTSCHL.,  
*H. pangaeum* SZELAG,  
*H. racolympicum* GOTTSCHL. & DUNKEL,  
*H. rechingeriorum* ZAHN,  
*H. sabaudolympicum* GOTTSCHL. & DUNKEL, and  
*H. vladimirovii* SZELAG.

In *H. umbrolympicum* GOTTSCHL. & DUNKEL characters of *H. umbrosum* preponderate, therefore, it is to categorize in the section *Umbrosa*. *H. jankolympicum* und *H. kritschimanum* MATTF. are closer to *H. pannosum* by a strong indument, and hence should be classified into the sect. *Pannosa*.

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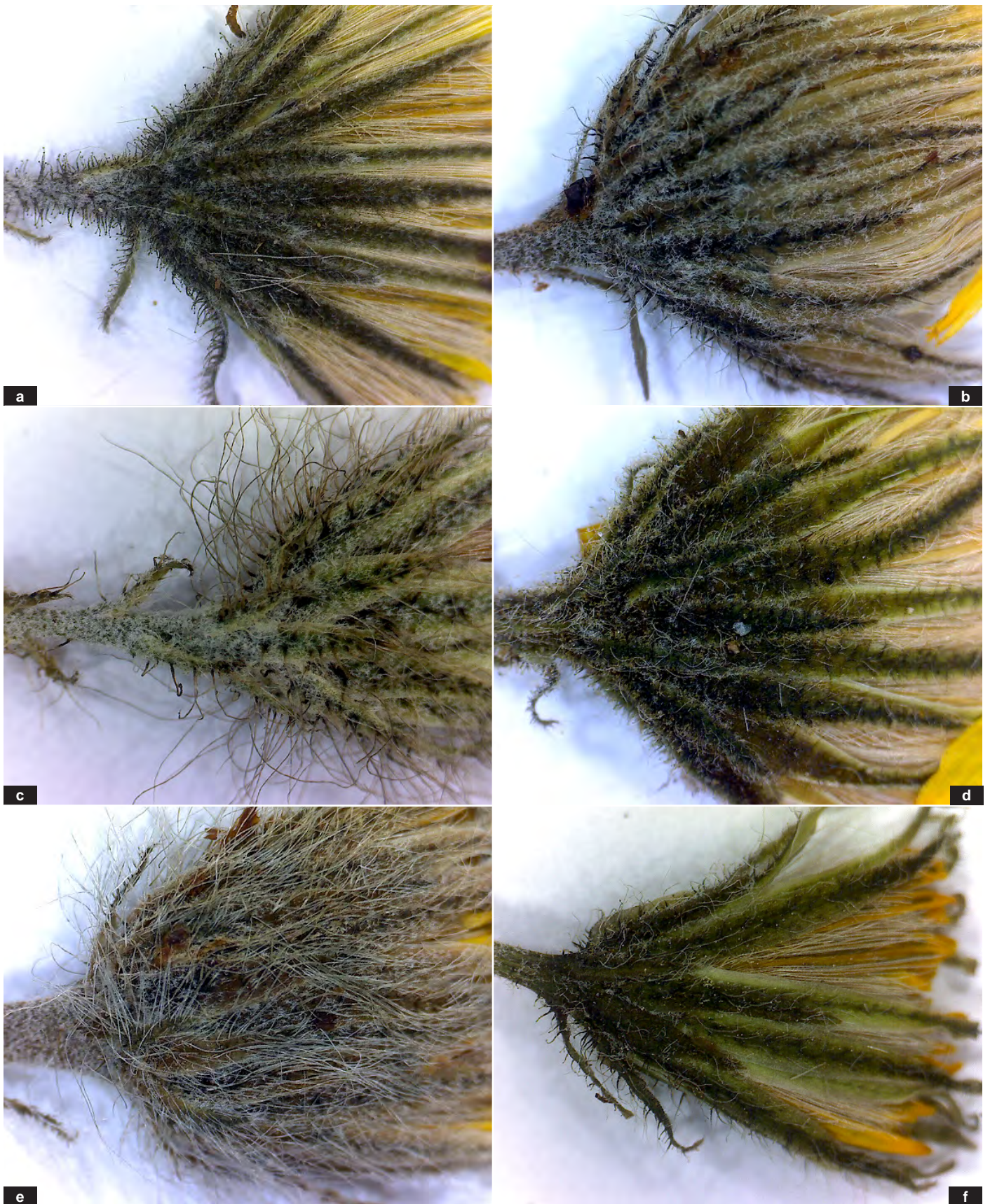




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**Fig. 17:** *Hieracium transiens* subsp. *excentricum* GOTTSCHL. & DUNKEL, specimen.



**Fig. 18:** capitula: **a:** *H. abietopsis*, **b:** *H. caesiolympicum*, **c:** *H. bractolympicum*, **d:** *H. diaphanoidopsis*, **e:** *H. jankolympicum*, **f:** *H. pellense*



**Fig. 19:** capitula: **a:** *H. perdentatum*, **b:** *H. thessalonikense*, **c:** *H. vermiense*, **d:** *P. pieriana*, **e:** *H. diaphanoidopsis* subsp. *volakansense*, **f:** *H. hypochoeroides* subsp. *paikoanum*.



**Fig. 20:** capitula: **a:** *H. pseudosparsum* subsp. *elatianum*, **b:** *H. retyezatense* subsp. *macilentoides*, **c:** *H. retyezatense* subsp. *vrontousense*, **d:** *H. transiens* subsp. *excentricum*.

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